

CLINICAL SONOGRAPHY III PRACTICE EXAM (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

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- 1. Which ABI value indicates probable claudication?**
 - A. <0.80 probable claudication
 - B. <0.95 abnormal
 - C. >0.95 normal
 - D. <0.30 ischemic rest pain
- 2. During inspiration, which of the following occurs?**
 - A. Diaphragm descends
 - B. Diaphragm ascends
 - C. Intra-abdominal pressure decreases
 - D. Intra-thoracic pressure increases
- 3. An oxygen challenge should be used if PO₂ falls between normal and poor levels. After the challenge, the PO₂ should be higher by how much?**
 - A. 10-20 mmHg higher
 - B. 30-40 mmHg higher
 - C. No increase expected
 - D. 5-10 mmHg higher
- 4. Which window is used to assess the retromandibular and proximal intracranial ICA?**
 - A. Transtemporal
 - B. Transforamenal
 - C. Submandibular
 - D. Transorbital
- 5. In the transforamenal approach, which vessels are assessed?**
 - A. intracranial vertebral and basilar arteries
 - B. MCA and ICA
 - C. Ophthalmic artery
 - D. Carotid siphon

- 6. Which post-injection PSV value range is considered reduced?**
- A. <25 cm/s
 - B. 25-29 cm/s
 - C. 30-39 cm/s
 - D. 40-50 cm/s
- 7. What is the normal FBI range?**
- A. 0.6-0.8
 - B. 1.0-1.2
 - C. 0.8-1.0
 - D. 0.4-0.6
- 8. An abnormal penile/brachial index is defined as which value, indicating vasculogenic impotence?**
- A. <0.50 vasculogenic impotence
 - B. >0.75 vasculogenic impotence
 - C. 0.65-0.74 vasculogenic impotence
 - D. <0.65 vasculogenic impotence
- 9. Penile pressures and waveforms are used to assess what?**
- A. Assess an individual's failure to attain or maintain an erection
 - B. Assess venous insufficiency in leg
 - C. Measure arterial blood pressure
 - D. Evaluate venous return after exercise
- 10. Which factor primarily propels blood toward the heart during the calf muscle pump?**
- A. Arterial pulsations
 - B. Gravity
 - C. Lymphatic pumping
 - D. Contracting leg muscles

Answers

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1. A
2. A
3. A
4. C
5. A
6. A
7. C
8. D
9. A
10. D

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Explanations

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1. Which ABI value indicates probable claudication?

- A. <0.80 probable claudication**
- B. <0.95 abnormal
- C. >0.95 normal
- D. <0.30 ischemic rest pain

The main idea is that the Ankle-Brachial Index measures leg perfusion by comparing ankle and arm pressures. Normal perfusion yields an ABI around 1.0; as peripheral arterial disease progresses, the ABI falls. Claudication occurs when blood flow is insufficient to meet the muscles' needs during walking, so a lower ABI reflects this perfusion deficit. An ABI below 0.80 is the threshold most strongly associated with claudication because the arterial obstruction is typically significant enough to produce symptoms during exertion. Values above 0.95 are considered normal or near-normal, and very low values (for example, below 0.30) suggest rest pain and more severe ischemia. Therefore, an ABI value below 0.80 indicates probable claudication.

2. During inspiration, which of the following occurs?

- A. Diaphragm descends**
- B. Diaphragm ascends
- C. Intra-abdominal pressure decreases
- D. Intra-thoracic pressure increases

During inspiration the diaphragm contracts and moves downward, enlarging the thoracic cavity. This downward movement increases thoracic volume and lowers intrathoracic pressure below atmospheric level, creating a negative pressure gradient that pulls air into the lungs. The diaphragm does not ascend during inspiration; and intrathoracic pressure does not rise—inspiration actually lowers it. While the abdominal contents are pushed downward, causing a slight rise in intra-abdominal pressure, the key observable effect related to air flow is the diaphragmatic descent and the resulting drop in intrathoracic pressure.

3. An oxygen challenge should be used if PO₂ falls between normal and poor levels. After the challenge, the PO₂ should be higher by how much?

- A. 10-20 mmHg higher**
- B. 30-40 mmHg higher
- C. No increase expected
- D. 5-10 mmHg higher

An oxygen challenge tests how arterial PO₂ responds to a high inspired oxygen level, helping to distinguish different causes of hypoxemia by showing how well the lungs can transfer oxygen into the blood. When PO₂ is between normal and poor, a modest rise is expected after giving 100% oxygen because increasing the inspired oxygen improves diffusion and the oxygen gradient, but not all alveoli participate fully and some blood may bypass oxygenation through shunts. The typical increase is about 10–20 mmHg. A much larger rise would be less common in this scenario, and little to no rise would suggest a more substantial shunt. Hence, a 10–20 mmHg increase is the best expectation.

4. Which window is used to assess the retromandibular and proximal intracranial ICA?

- A. Transtemporal
- B. Transforamenal
- C. Submandibular**
- D. Transorbital

In transcranial Doppler imaging, different acoustic windows let you access different parts of the intracranial circulation. The retromandibular portion and the proximal intracranial internal carotid artery lie close to the skull base behind the mandible, so placing the transducer in the submandibular region and angling the beam upward toward the skull base allows insonation of these segments. This window complements the transtemporal window (which targets vessels like the MCA, ACA, and PCA through the temporal bone) and the transorbital window (used for orbital/ophthalmic portions). The submandibular window is specifically best for the retromandibular and proximal intracranial ICA.

5. In the transforamenal approach, which vessels are assessed?

- A. intracranial vertebral and basilar arteries**
- B. MCA and ICA
- C. Ophthalmic artery
- D. Carotid siphon

The transforamenal approach is used to evaluate the posterior circulation that passes through the foramen magnum, specifically the intracranial vertebral arteries and the basilar artery. The vertebral arteries enter the skull via the foramen magnum and join to form the basilar artery, so this approach directly targets those vessels. It isn't used for the anterior circulation vessels like the MCA and ICA, which are typically assessed with other acoustic windows; nor is it focused on the ophthalmic artery or the carotid siphon, which are not the vessels accessed through the foramen magnum. Therefore, this approach best assesses the intracranial vertebral and basilar arteries.

6. Which post-injection PSV value range is considered reduced?

- A. <25 cm/s**
- B. 25-29 cm/s
- C. 30-39 cm/s
- D. 40-50 cm/s

Understanding what constitutes a reduced post-injection peak systolic velocity helps you gauge arterial inflow after an intervention or bolus. PSV reflects the highest speed of blood flow during systole; after an injection, the expected perfusion transiently increases, so a lower-than-expected peak velocity indicates reduced flow to the tissue. A value below 25 cm/s is considered reduced because it falls below typical normal ranges for many vessels and protocols, signaling diminished arterial inflow. The other ranges listed (higher values) would be interpreted as normal or closer to normal perfusion rather than reduced. Keep in mind that exact cutoffs can vary with the vessel and technique, and factors like insonation angle can affect measured velocities.

7. What is the normal FBI range?

- A. 0.6-0.8
- B. 1.0-1.2
- C. 0.8-1.0**
- D. 0.4-0.6

FBI is a ratio used in fetal biometry to assess the proportional relationship between two fetal measurements. A value in the 0.8 to 1.0 range indicates the measurements grow in expected proportion, suggesting normal fetal growth balance. Values outside this range imply a deviation from proportional growth, which may warrant further evaluation. Therefore, the normal FBI range is 0.8–1.0.

8. An abnormal penile/brachial index is defined as which value, indicating vasculogenic impotence?

- A. <0.50 vasculogenic impotence
- B. >0.75 vasculogenic impotence
- C. 0.65-0.74 vasculogenic impotence
- D. <0.65 vasculogenic impotence**

The penile/brachial index is the ratio of penile systolic pressure to brachial systolic pressure, used to assess arterial inflow to the penis. A normal value is typically above about 0.75, reflecting adequate penile arterial inflow relative to systemic pressure. An abnormal value defined as below 0.65 indicates significant arterial insufficiency, which matches vasculogenic impotence caused by penile arterial disease. Values between 0.65 and 0.74 are often considered borderline, and values well below 0.65 point to more definite vasculopathy. Therefore, a value below 0.65 best indicates vasculogenic impotence.

9. Penile pressures and waveforms are used to assess what?

- A. Assess an individual's failure to attain or maintain an erection**
- B. Assess venous insufficiency in leg
- C. Measure arterial blood pressure
- D. Evaluate venous return after exercise

The main idea is: these penile measurements are used to evaluate erectile function by looking at how well the penile vasculature can fill and trap blood during an erection. Measuring intracavernosal pressure during an induced erection shows whether arterial inflow is adequate and whether the venous system can occlude to maintain erection. The waveform patterns reflect how well blood enters and is retained in the cylinders. This helps distinguish vascular causes of erectile dysfunction—such as insufficient arterial inflow or venous leakage—from other factors, guiding management. They aren't used to assess leg venous insufficiency, general arterial blood pressure, or venous return after exercise.

10. Which factor primarily propels blood toward the heart during the calf muscle pump?

- A. Arterial pulsations
- B. Gravity
- C. Lymphatic pumping

D. Contracting leg muscles

Calf muscle contraction acting as a pump is the main driver of venous return from the leg. When the calf muscles contract, they compress the deep leg veins, raising intraluminal pressure and pushing blood upward through the one-way venous valves. The valves prevent backflow, so the blood moves toward the heart with each squeeze. When the muscles relax, the valves stay closed to stop retrograde flow, and the cycle repeats with the next contraction. Gravity can influence blood flow depending on position, but without muscle contraction the return is slow and pooling can occur. Arterial pulsations affect arteries, not the venous return in this context. Lymphatic pumping moves lymph, not blood, so it doesn't propel venous blood back to the heart.

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Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

<https://clinicalsonography3.examzify.com>

We wish you the very best on your exam journey. You've got this!

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